Application No. 09/875,323
Attorney Docket No. 3833-010852

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.	:	09/875,323 CONFIRMATION NO. 7514
Applicants	:	Dale Starkey
Filed	:	June 6, 2001
Title	:	EPOXY MOLDING COMPOUNDS CONTAINING PHOSPHOR AND PROCESS FOR PREPARING SUCH COMPOSITIONS
Group Art Unit	:	1712
Examiner	:	Robert E. Sellers

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

DECLARATION OF PRIOR INVENTION UNDER 37 C.F.R. §1.131

I, Dale Starkey, hereby declare as follows:

1. I am named as the inventor of the invention described and claimed in the above-referenced application.

2. I am currently an employee of Henkel Corporation [into which was merged effective January 1, 2004 Henkel Loctite Corporation, which name had been Loctite Corporation (assignee of record of the present application by way of an assignment document recorded at the Assignment Branch of the U.S. Patent and Trademark Office at reel and frame 012239/0561) but was changed May 16, 2002], and at the time of conceiving and reducing to practice the invention described and claimed in the subject application was employed by Loctite Corporation.

3. I submit this Declaration in support of the subject application to establish the conception and reduction to practice of the invention described and claimed therein in the United States at a date prior to November 17, 2000, i.e., the filing date of U.S. Patent No. 6,518,600 to Shaddock ("Shaddock"), which was cited in an Office Action mailed Mach 15, 2005 in connection with the above-referenced application.

4. From the document attached hereto as Exhibit A and as set forth below, the invention was completed, i.e., that is, conceived of and reduced to practice, prior to November 17, 2000, the filing date of Shaddock. Conception and reduction to practice of the invention in the United States prior to November 17, 2000 is shown by the preparation and evaluation of an epoxy composition composed of an epoxy resin component, an anhydride component, a polyol component, and a light-emitting phosphor material uniformly distributed throughout the composition through partial curing of the composition with the phosphor material suspended therein.

5. To establish conception and reduction to practice, i.e., completion of the invention, at a date prior to November 17, 2000, a photocopy of pages 77-79 from my Laboratory Notebook No. 2750, identifying Project No. L00-98L, are attached hereto as Exhibit A. The dates appearing in the notebook pages have been redacted as have been names of any commercial suppliers of the materials set forth in those pages.

6. The experimentation as described in NB2750-78 of Exhibit A involved mixing an epoxy resin (RE0088, triglycidyl isocyanurate), an anhydride component (HD3887, hexahydrophthalic anhydride), and a phosphor material (QUMK58), and increasing the viscosity of this mixture by adding a polyol (ACO118, glycerin) to initiate reaction of the composition and form an intermediate while maintaining the phosphor material uniformly suspended therein by continued mixing. This intermediate was thereafter B-staged through partial curing of the epoxy with the phosphor material substantially uniformly distributed through the composition.

7. Additional experimentation as described in NB2750-79 of Exhibit A was conducted in a similar manner to form the partially cured epoxy composition with the phosphor material substantially uniformly distributed therein in the form of B-staged pellets. One of the pellets thus formed was sawed in half horizontally and the filler content (the phosphor content) was measured in both halves. As set forth in Exhibit A, no significant difference in phosphor content between the halves was observed, with the top half recorded as having 1.48% filler and the bottom half recorded as having 1.50% filler. Accordingly, the phosphor material was substantially uniformly distributed throughout the composition by partially curing the epoxy with the phosphor material substantially uniformly suspended therein.

8. Exhibit A therefore establishes that the invention as claimed was completed, i.e., conceived and reduced to practice, at a date prior to November 17, 2000, the filing date of Shaddock.

9. I declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Dale Starkey

Dale Starkey

May 16, 2005

Date

DATE [redacted] SUBJECT: Phosphor [redacted]

Object: Add 0.5% Phosphor to MK-18
Phosphor [redacted] (Q11mk58)

NB2750-77

		7.5
HD3882	50.96	382.20
RE0088	38.92	291.70
AC6069	1.00	7.50
TM0498	0.50	3.75
AC0118	8.12	60.90
Phosphor	0.50	3.75
	100.00	750.00

1. Add everything except AC0118 & heat to 109°C soak above 100°C for 20 min. Looks green & milky (2.5 Torr)
2. Cool to 65°C
3. Add Glycerine - cooled to ≈ 55°C
4. Heat again under vacuum (1.1 Torr) Hit 75 at 2:45. Hold at 75°C for 20 min.
5. Pour into 25 gram trays.
6. Start Program at about 3:15 pm [redacted]

[redacted]

Pn	1					
nS	3					
Seg	1	2	3	4	5	6
rt	0.20	0.30	8.0			
rr						
SP	65	25	65			
E1						
E2						
E3						
St	2	2	10			
E1						
E2						
E3						
PLCt						
dhru						
dhrd						
PEnd						

pulled @ 7:00 [redacted]
restart @ 65°C @ 10:00 [redacted]

Total Time: 26 hrs then cooled
- 5 hrs
= 31 hrs

OUT 13:00 [redacted] FLOW - 41.5

WITNESSED AND UNDERSTOOD DATE [redacted] SIGNED Dale Starkey
DATE DATE [redacted]

Exhibit A

78 DATE [redacted] SUBJECT Phosphor [redacted] PROJECT NO. 100-982

Object Add 1.0% Phosphor to M618

NB2750-78 x10

HD3827	50.70	507.00gr
RE0068	38.72	387.20gr
AC6869	1.00	10.00gr
IM0498	0.50	5.00gr
AC0118	8.08	80.80gr
Quinkse Phosphor	1.00	10.00gr
	100.00	1000 grams

(%Solids 83.3) (Anh:OH 1.88)

Sample identification: NB2750-78 : with Phosphor 1.0%

Step	Raw material	Formula percentage	Amount added grams	Temp. @ addition degrees Celcius	Low/High Temp. degrees Celcius	Total mix time minutes	vacuum level torr	Comments
1	HD3827	50.70	507.00	Start	34/106	30	9.7"	Added all ingredients with the exception of AC0118 and heated to 104°C. Will soak for ~30 minutes before cooling to add AC0118. Total mix time with heat up and soak is 60 minutes. The solution is very homogeneous at this time. Cooled to 67°C and added the AC0118. The temperature dropped to 64°C and heat was reapplied. It took approximately 5 minutes minutes to heat to 75°C and soaked there for 17 minutes. Stopped reaction and poured into pre-treated trays. Let cool on bench for 15 minutes before putting in the oven. Used program with a 90 minute ramp to 65C and soaked for two hours. Then cool to 25C in 90 minutes and soak for 2 hours. Then ramp to 95C in 8 hours and soak until done.
2	RE0068	38.72	387.20	Start	34/106	30	9.7"	
3	AC6869	1.00	10.00	Start	34/106	30	9.7"	
4	Phosphor	1.00	10.00	Start	75/80	30	9.7"	
5	IM0498	0.50	5.00	Start	75/80	30	9.7"	
6	AC0118	8.08	80.80	65	65/75	20	1.1	
7								
8								
9								
10								

START program @ 15:00 [redacted]

Shut off 16:00

Checked flow 8:00am [redacted] a little more than 100"

Put in at 65 from 8:30 to 12:00 noon Flow = 54"

Pulled at 12:00noon

Back in at 65°C at 2:00 check at 4:00pm 144" Full

Time From Start of Program: 25hrs Hrs cooled

+ 4hrs

+ 2hrs

Total = 31 hrs

WITNESSED AND UNDERSTOOD

SIGNED [redacted] DATE [redacted]

SIGNED Dale Stanley DATE [redacted]

DATE [redacted] SUBJECT Phosphor PROJECT NO. 100-TK-79

Object: Add 1.5 Phosphor to M618

NB2750 79			125	
HD3887	~~50.45~~	50.71	633.88	
RE0068	~~38.52~~	39.02	494.00	
AC6069	1.00	1.00	112.50	
TM0498	~~0.00~~	0	0	
AC0118	~~8.03~~	8.07	100.87	
QUIMKSB Phosphor	1.5	1.150	18.75	
	100.00	100.00	1250.00	

Note: We sawed one pellet in half horizontally + measured fillers content on both halfs. We saw no significant difference.
Top Half Filler = 1.48%
Bottom Half Filler = 1.50%

Sample identification- NB2750-79 : with Phosphor 1.5% (%Solc.63.3) (Anh:OH 1.68)

Step	Raw material	Formula percentage	Amount added grams	Temp. @ addition degrees Celcius	Low/High Temp. degrees Celcius	Total mix time minutes	vacuum level torr	Comments
1	HD3887	50.71	380.33	Start	341/06	30	6.7'	Added all ingredients with the exception of AC0118 and heated to 104°C. Will soak for ~30 minutes before cooling to add AC0118. Total mix time with heat up and soak is 60 minutes. The solution is very homogenous at this time. Cooled to 67°C and added the AC0118. The temperature dropped to 64°C and heat was reapplied. It took approximately 5 minutes minutes to heat to 75°C and soaked there for 17 minutes. Stopped reaction and poured into pre-heated cans. Let cool on bench for 15 minutes before putting in the oven. Used program with a 30 minute ramp to 85C and soaked for two hours. Then cool to 25C in 30 minutes and soak for 2 hours. Then ramp to 85C in 9 hours and soak until done.
2	RE0068	38.72	290.40	Start	341/06	30	6.7'	
3	AC6069	1.00	7.50	Start	341/06	30	6.7'	
4	Phosphor	1.50	11.25	Start	75/80	30	2.2	
5	AC0118	8.07	60.53	65 / 80'	63/75 / 75/86	20	2.2	
6								
7								
8								
9								

Start program @ 11:00 [redacted]
Check at 8:00am [redacted] 96"
Check at 12:00 noon 55" (Pulled at 12:00 noon)
Back at 2:00 check at 4:00 = 42" pull

Total Time 3.5 hrs
+ 2 hrs = 5.5 hrs

750

Note: 1st Batch only made 1000 grams - Needed 40 pellets so made a second Batch
NB2750-91

[redacted] DATE [redacted]
DATE

SIGNED Dale Starkey
DATE [redacted]